Xerox LS 3270
User's Guide

Doc. no D60322   Revision 01

WARNING:
This equipment generates, uses, and can radiate radio frequency energy and if not installed and used in accordance with the instruction manual, may cause interference to radio communications. It has been tested and found to comply with the limits for a Class A computing device pursuant to Subpart B of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference when operated in a commercial environment. Operation of this equipment in a residential area is likely to cause interference in which case the user at his own expense will be required to take whatever measures may be required to correct the interference.

EMC directive:
This product observes the rules and regulations of the EMC directive. If so required, a declaration of conformity in local language stipulating the applied rules and regulations can be obtained.

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Preface

September 1997

This manual applies to the *Xerox LS 3270* protocol converter, installed with firmware release S10 130.002, and to any subsequent release until otherwise specified.

The *Xerox LS 3270* supports Coax and Centronics inputs. The output is Centronics.

The manual describes how the *Xerox LS 3270* is connected and operated. Read it (and the Quick Guide provided with the product) before you start using the protocol converter, and keep the manual in a safe place for future reference.

It is assumed that the reader has a basic knowledge and understanding of IBM computer systems, especially the IBM *3270 Information Display System*. It is also assumed that the reader has adequate knowledge of the printer which is going to be connected to the *Xerox LS 3270.*

The *Xerox LS 3270* can be used with most ASCII printers.

Related Manuals

"3270 Programmer's Guide", Document no. D62077.

> The above manual describes how the *Xerox LS 3270* is tailored for a specific printer or application. Output drivers are FSL or PCL which are selected via the front panel of the box (See Chapter 1. for more details).

"IBM 3268 Printer Models 2 and 2C Description"
IBM Order No. GA27-3268

Contains information on the IBM *3268* printer which *Xerox LS 3270* emulates.

Table of Contents

1. Introduction to the Xerox LS 3270

This chapter gives a short description of the *Xerox LS 3270* and its installation requirements.

1.1. What is the Xerox LS 3270?

The *Xerox LS 3270* is a protocol converter which enables any printer (or other output device) to be connected to an IBM computer system.

The printer or device should have a *Centronics* parallel connector in order to be connected to the *Xerox LS 3270* protocol converter.

The IBM system should use the *3270* type terminals. See *Section 1.3, Supported Control Units*, for information on the IBM systems to which the *Xerox LS 3270* connects.

1.1.1 PCL or FSL output driver

The output driver selection (rotary) switch on the front panel of the box allows you to select between the following two drivers:

The PCL Driver (Default)
If you select **PCL** (set address switch to **A**), the box is ready to operate as it is. When used with certain older IBM controllers, the FSL function Y8 may have to be set to obtain the correct SCS printer language. For further pro gramming of the box, you are referred to the "3270 Programmer's Guide" Document no. D62077.

The FSL Driver
To use a non-PCL printer or connect to a serial input port on a printer, you select **FSL** (set address switch to **B**). The Xerox LS 3270 is compatible with the Xerox 3270 C/RS box. For program-ming the internal setup of the box you must refer to the "3270 Programmer's Guide" Document no. D62077 .

Changing the Driver

To change from PCL to FSL driver or vice versa, first of all the rotary switch *has* to be in position T *at power on.* The current printer driver will be indicated on a printout. The actual selection of printer driver is then made by turning the rotary switch to position A (PCL) or B (FSL). The new position will also be indicated on a second printout. When the correct position is obtained, turn the rotary switch *away* from the A, B or T positions (any other position will do). The new driver is now active.

1.2. Xerox LS 3270 Features

The *Xerox LS 3270* protocol converter gives you the following features:

- IBM 3287, 3268[1] *and 4214 emulations*

- *Support of the SCS (LU1) and 3270 data stream (LU0 or LU3) modes* including FMH data streams as required by the host system.

- All *IBM RPQs*

- Parallel output in PCL mode

- *Up to 8 user strings* of variable length can be transmit ted to the printer from the *Xerox LS 3270* - automatically at power on and before and after Local Copy from the host system.

- Automatic input sharing between Coax and Centronics input ports.

- Coax FSL setup via share port

- Flash prom allowing downloading of new firmware via the coax or the centronics port.

- Support of ida PSS

- Autoconfiguration (PCL only)

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[1]3268 = factory default

1.3 Supported Control Units

The *Xerox LS 3270* connects to the following control units:

- IBM *3174*   All models

- IBM *3274*   All models (A-adapter)

- IBM *3276*   All models

- IBM *4321/31/41/61*   All models

- IBM *81XX*   Via *327x* controllers or *8775* terminals

- IBM *4701/4702*   Through the *Device Cluster Adapter*

- IBM *8775*   Through *3287* attachment RPQ

All equivalent *3274/76* PCM controllers, subject to valida tion by your dealer. Contact your dealer for more information.

1.4. Installation Requirements

Please first check that you have received the following items:

- Xerox LS 3270 Converter
- Xerox LS 3270, Quick Guide; Doc. no. D10322
- Xerox LS 3270, User's Guide; Doc. no. D60322

In addition, the following i-data accessories can be used:

- Extension Centronics cable
      Order no. 999 020 030

- 5V external power supply:
      Order no. 999 021 130 for EU
      Order no. 999 021 230 for UK
      Order no. 999 021 330 for US

1.5 Paper Size Default (US/EU)

When you receive the *Xerox LS 3270*, the box is ready to connect to the system and to the printer. From the factory, the *Xerox LS 3270* interface is set up for either US (Letter) or European (A4) paper size (depending on what you specified when ordering the *Xerox LS 3270*). If, however, you should need to change the default, you may do this by using the FSL function Y8 (see Appendix A for details).

1.6. Operating Environment

The *Xerox LS 3270* protocol converter can be installed in the following environment:

- Works in the complete temperature range specified for the connected printer if not exceeding *45° Centigrade*
- Relative humidity between 8% to 80%, non-condensing
- External power supply: 5V (250 mAmps).

2. Installation of the Xerox LS 3270

This chapter starts with an overview of the functionality of the front panel. Then follows a description of how you connect the *Xerox LS 3270* box to a printer.

NOTE:
Before you start the installation, make sure that the rotary switch is set to the required emulation (PCL is default). See the location of the switch in section 2.1. below.

2.1. Knowing the Front Panel
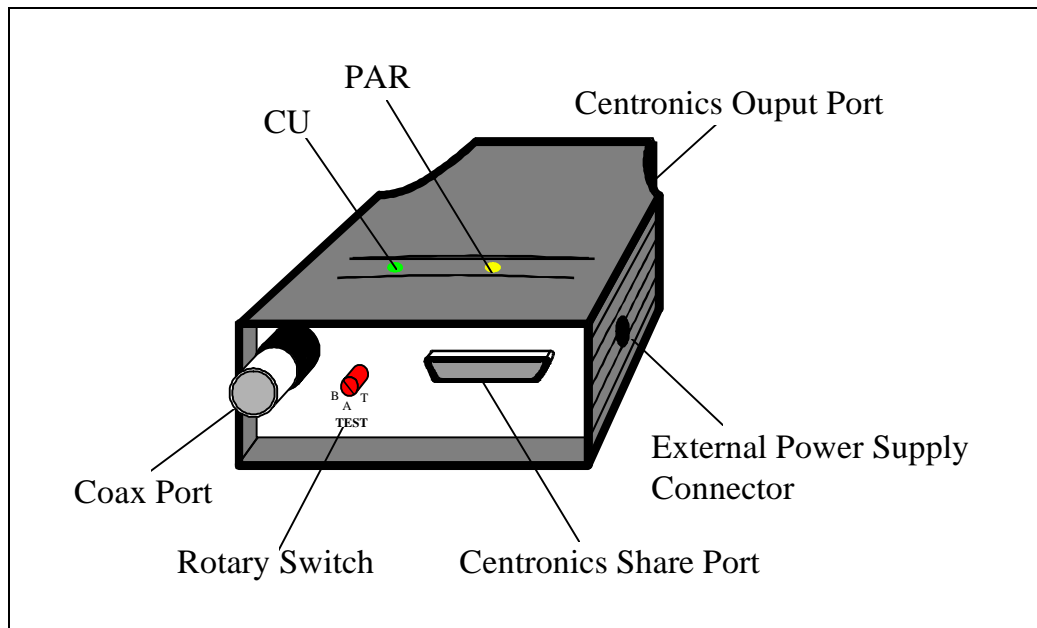
Fig 2-1 Xerox LS 3270 Front Panel

COAX
The coax cable is connected to the host which communicates in accordance with the 3270 protocol.

PARALLEL/CENTRONICS OUT
The parallel/Centronics output port is connected to the parallel/Centronics in put port on the target printer.

ROTARY SWITCH

The rotary switch is used for changing the output driver (PCL or FSL) and for generating a TEST print. See the section 1.1.1, *PCL or FSL output Driver* for information on changing the driver and the section 2.3, *Testing* for information on making a TEST printout.

PARALLEL/MINI-CENTRONICS IN

The parallel/mini-Centronics input port can be connected to the parallel/Centronics out put on a PC or similar source able to share the printer with the host.

2.2. Installation

> **CAUTION:**
>
> **All connections to the *Xerox LS 3270* protocol converter should be made while the power is switched OFF.**

2.2.1 Pre-Installation Information

Printer Dependency:

An external power supply may be needed for the *Xerox LS 3270* if the printer does not have 5V on pin 18 on the Centronics input port.

This can be verified at the time of installation in the following way:

An external power supply is needed:

- if the PAR and CU LEDs do not turn ON when the printer is powered ON with the *Xerox LS 3270* installed, and

- if no print is generated when making a TEST printout (see section 2.3, *Testing* for details.

<u>Printer Cable:</u>

The *Xerox LS 3270* does not necessarily have to be plugged directly into the Centronics Input Port of your printer. An extention Centronics cable can be ordered for distance connection between the *Xerox LS 3270* and your printer. This kit also contains a velcro tape to enable mounting on the side of a printer.

> **Order no. 999 020 030**

2.2.2 Installation Procedure

Below follows the procedure for installing the Xerox LS 3270:

1. Make sure the printer power is turned OFF.

2. Plug the Centronics Output Port of the *Xerox LS 3270* into the Centronics Input port of the printer and lock it with the bail locks.

3. Check that the rotary switch on the *Xerox LS 3270* is in the correct position for the printer driver needed:

    > Position **A** for **PCL** (default)
    > Position **B** for **FSL**

    If you need to make changes to the printer driver, see section 1.1.1, *PCL or FSL output Driver*, "Changing the Driver", for details on how to do this.

4. Connect the coax cable to the *Xerox LS 3270.*

5. Power ON the printer. The CU and PAR LEDs of the *Xerox LS 3270* will turn on if the power is sufficient (for location of CU and PAR LEDs, see figure 2-1 in Section 2.1 *Knowing the Front Panel*).

6. Check power and signal connection. If po wer is sufficient *and a coax connection exists between the Xerox LS 3270 and a controller*, the green CU LED will stay ON. If the CU and PAR LEDs were not turned on at power on, you must add an external power supply to the *Xerox LS 3270.*

5. Send a job from the host system and check the printout. Note that the system printer emulation *must* match the *Xerox LS 3270* printer driver. If not, change the printer driver

using the rotary switch (see section 1.1.1, *PCL or FSL output Driver* for details).

2.2.3 Automatic Power Supply Control

The *Xerox LS 3270* will perform a power supply control to see if there is sufficient power on the unit.

Section 2.2.1, "*Pre-Installation Information*" describes how to recognize whether a 5V external power supply is needed in order to make the *Xerox LS 3270* work.

The 5V power supply can be ordered, using the below order numbers:

Order no. 999 021 130 for EU
Order no. 999 021 230 for UK
Order no. 999 021 330 for US

The transformer is connected to the plug on the box's side panel as indicated in Fig. 2-3 in the following.

External Power Supply
Connector
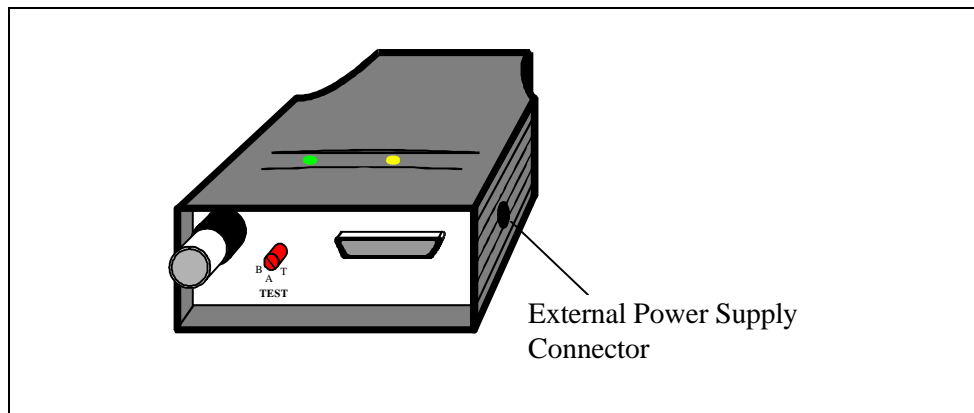
Fig. 2-3 The Xerox LS 3270 and its side panel

2.3. Testing

> ## PCL driver:
>
> The default configuration of the interface will suffice for most application programs and uses. You should only change the configuration shown in the test printout if you have special requirements.
>
> If you should wish to change the configuration, the options may be set from the line as described in the Programmer's Guide; document no. D62077 (see "Related Manuals").

> ## FSL Driver
>
> With the FSL driver you have selected an unprogrammed printer driver. You have to program the internal setup of the box to suit your printing requirements. See Programmer's Guide; document no. D62077 for further details.

1. Power the unit ON.

2. Turn the rotary switch to the "T" position and back to the original position. This will generate a **settings printout**

3. When the switch has been turned back to its original position, the CU indicator will start flashing for approximately 30 seconds.

4 Turn the rotary switch to the "T" position once again *while the CU indicator is flashing* The unit will now enter **Online HEX dump** mode. The dump mode is terminated by turning the switch away from and back into the "T" position.

   NOTE:
   The CU indicator will be blinking rapidly while the rotary switch is in the "T" position. This is an indication that the "T" position is not a valid permanent position.

5. Compare the settings printout (FSL or PCL printout) with the printout illustrated in C *hapter 8, Test Printouts.*

> **Keep the settings printout together with this manual**
> **for future reference.**

Settings Printout using FSL Y120 (PCL mode only)

A settings printout can also be generated at power-on by activating
function Y120[2].

2.4. Timeout

The *Xerox LS 3270* enables printer sharing between the system
and a PC. For this purpose it is possible to specify a timeout
period.

If the printer is receiving input on the parallel port, for example,
and there is a break in the transmission of data, the other input
ports will not be polled for the period speci fied.

The factory default timeout is 20 seconds. The timeout may be
changed to suit your requirements. This is done by sending a new
setup to the *Xerox LS 3270* input port where you want it to take
effect. See *Chapter 4. Specifying Timeout*

When specifying the timeout it is also possible to specify a user
string. A user string may be used for changing from one symbol set
(e.g. Roman 8) to another (e.g. IBM -PC8), for example.

NOTE:
Settings on the coax input port are automatically
reestablished after another input port has been
using the printer.

On the parallel input port, you have to program the
required setup yourself.

For more detailed information on the commands required, see
Chapter 5, Specifying Timeout

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[2]For details on how to define the ESC character %, please see Chapter 5.

3. Operation of the *Xerox LS 3270*

The *Xerox LS 3270* top panel has been designed to register the operation of the box via the following indicator LEDs :

- CU (contact to Control Unit)

- PAR (parallel input)

See the illustration in the section *Knowing the Front Panel* for the position of the LEDs.

3.1. Indicators of the Xerox LS 3270

CU (Contact with Control Unit)

This indicator LED has 3 states:

State	Indication
ON	Contact with the control unit.
BLINKING	1. Contact with the control unit, and data pending in the *Xerox LS 3270* buffer. 2. Indicates that the address switch has been activated and the box is ready to enter on-line HEX dump mode
OFF	No contact to the control unit, or the contact has been broken for more than 1 minute.

PAR (Parallel input)

The indicator LED has 2 states:

State	Indication
ON	Indicates that the box is processing data from the Centronics parallel port
OFF	Indicates that the box is idle or processing data from the coax input

4. Specifying Timeout

In order to specify the timeout for a specific input port, an FSL (*F*unction *S*election via the Line) sequence must be sent to the port in question. To do this a tempo rary Escape (ESC) Character must be defined first. This is done in the following way:

&&??<character>

The sequence "&&??%" will define "%" as the ESC Character.

Timeout is specified in FSL Function 100 . This function has the following syntax ("%" is the ESC Character):

%Y100,<timeout>[,user string]%

Factory default = 20 seconds

Timeout: 0 to 255 indicating number of seconds

User string: *Optional* - string in HEX to be sent to the printer before transmission of data, when the printer is selected by the share unit.
If function 100 is sent to the coax, a user string number can be defined instead of a HEX string. The user string then has to be defined in function 61.

NOTE:
The Timeout string must be written in ONE line (see example overleaf).

The user string and settings will only be sent if a share condition has occurred.

The new setup must be saved in the NVRAM[3] with the following command ("%" is the ESC Character):

```
%X1
```

The FSL string above was split up into several lines for reasons of clarification to simplify the explanation of the different functions. Below is an example where the FSL string is typed in one line.

Example:

```
&&??%%Y100,30,1B,45%%X1
```

The FSL string above has the following effect:

- Defines % as ESC character
- Sets timeout to 30 seconds
- Send 1B 45 HEX before the next data transmission.
- Saves setup in the NVRAM.

> **NOTE:**
> **FSL Y100 works on the port it is sent to. If it is sent to the parallel input port, the string containing the Function Y100 programming will be printed when it is sent to the *Xerox LS 3270*. See Chapter 6, FSL Setup via Xerox LS 3270 Parallel Port**

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[3]NVRAM = Non-volatile RAM

5. Programming the *Xerox LS 3270*

The *Xerox LS 3270* supports approximately 60 internal Setup Functions (FSL Functions) [4]. When the protocol converter has been installed and connected to a printer, you may have to consider the use of these setup options.

FSL setup functions can be sent either from your IBM system or from a PC.

PCL Driver (Default)

If you have decided to run the *Xerox LS 3270* in PCL mode (see Chapter 1), the *Xerox LS 3270* is ready to operate after you have completed the installation procedure. The factory default setup will meet the demands of most host systems and users, and special programming is therefore normally not required.

However, special circumstances may require changes in the programming of the box. For full details on this please see the " 3270 Programmer's Guide" Document no. D62077. In the Programmer's Guide you will find an extensive description of the FSL Functions with notes, comments and examples.

FSL Driver

If you have decided to run the *Xerox LS 3270* in FSL mode (see Chapter 1), you have just selected an unprogrammed printer driver and you need to program any further settings of the box using FSL functions. The " 3270 Programmer's Guide" Document no. D62077, gives you full details on how you do this.

> **On the following pages you will find a list of the functions available in PCL mode and FSL mode respectively.**

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[4]FSL = Function Selection via the Line

5.1. Setup functions supported in PCL mode

Y1	Set IBM Buffer Size
Y2	Set Default LPI
Y3	Set Default CPI
Y4	Set Default Line Spacing
Y5	Set Default Page Length (MPL)
Y6	Set Default Max. Print Position (MPP)
Y7	Set Case (Mono,Dual)
Y8	Set LU1 Language
Y10	Set Page Format
Y11	Set Default Paper Path
Y12	Set Default Paper Size
Y13	Line Overflow Condition
Y14	Enable Graphics Option (idaAFP)
Y19	Set Simplex/Duplex
Y22	Printer Driver Selection
Y25	FF Before Local Copy
Y26	FF After Local Copy
Y27	NON-SCS Print Image
Y28	NON-SCS, CR at MPP+1
Y29	NON-SCS, NL at MPP+1
Y30	NON-SCS, Valid FF Followed by data
Y31	NON-SCS, Valid FF at end of buffer
Y32	NON-SCS, FF Valid
Y33	NON-SCS, Automatic Func. at end of job
Y34	Last LF on page sent as FF
Y36	Suppress IBM control codes (parameters 0 and 1)
Y37	IBM Printer Emulation Select (parameters 0,1,2 & 4)
Y38	IBM Communication Feature (Query, EAB)
Y41	Generation of NL at EM
Y44	Suppress CR and SP
Y46	Set IRQ Timer
Y47	ESC Mode Selection
Y48	Set Permanent ESC Character
Y49	Restrict access of NVRAM settings
Y50	FF After Time Elapse
Y51	User-defined string(s) at Power-on
Y57	User-defined string before local copy
Y58	User-defined string after local copy
Y59	Bar Code Type Definition
Y60	Font Link
Y61	Setup for user-defined strings (parameters 0 - 7)
Y62	Setup for IBM defined strings
Y63	Define Logo
Y72	Reset Translate Table
Y73	Select Translate Table

Y74	Printer Symbol Set Definition Strings
Y75	Overwrite Translate Table
Y77	Reset APL Translate Table
Y78	Select APL Translate Table
Y79	ida 820 AFP Font Offset
Y80	Overwrite APL Translate Table
Y88	Margin Definition
Y89	Enable Margin Definition
Y90	Define User Escape String
Y91	Font Definition
Y92	Font Point Size Definition Strings
Y93	Font Attribute Definition
Y94	Font Typeface Definition
Y96	Font Change Simulation
Y98	Automatic Page Orientation
Y100	Port Sharing Option
Y110	idaAFP Orientation Support
Y111	idaAFP Duplex Support
Y112	idaAFP PCL5 Font Support
Y113	idaAFP Early Print Complete
Y114	idaAFP Colour Support
Y115	idaAFP Miscellaneous
Y119	Autoconfiguration Select
Y120	Print Test Page at power on

ESC Features:

%%   Special transparent feature (Multiple paired Hex transparent).

> e.g.: %%*1B45*%

where % is the defined ESC character.

%   Special transparent feature (Single paired Hex transparent).

where % is the defined ESC character.

Send Logo:

L   Send logo (Logo is defined in Y63).

TEST functions (T-Functions):

T1	Offline Hex Dump (PCIA Dump)
T2	Online Hex Dump
T3	Online ASCII Hex Dump
T4	Print out Settings
T5	Printout Character Set
T6	Cancel Online ASCII Hex Dump

User Settings Functions (X-Functions):

X1	Store Settings in Permanent Storage
X2	Restore Settings from Permanent Storage
X3	Restore Factory Default Settings
X4	Restore Settings from Permanent Storage
X5	Restore Settings (SCS settings will be retained)

Engineering Functions:

Y249	Enable Engineering Mode

Z Functions:

Zn	Send user-defined string

W Functions:

Wn	Printing Barcodes (defined in Y 59)

5.2. Setup Functions supported in FSL mode

Y1	Set IBM Buffer Size (parameters 2,3,4 & 5)
Y2	Set Default LPI (parameters 6 & 8)
Y3	Set Default CPI (parameters: 10, 12, 15 & 16)
Y5	Set Default Page Length (MPL)
Y6	Set Default Max. Print Position (MPP)
Y7	Set Case (Mono,Dual)
Y8	Set LU1 Language
Y9	Set Default Print Quality (parameters 2 & 3)
Y11	Set Default Paper Path (parameters 1, 2 & 3)
Y14	Enable Graphics Option (idaAFP) (parameters 0 & 1)
Y25	FF Before Local Copy
Y26	FF After Local Copy
Y27	NON-SCS Print Image
Y28	NON-SCS, CR at MPP+1
Y29	NON-SCS, NL at MPP+1
Y30	NON-SCS, Valid FF Followed by data
Y31	NON-SCS, Valid FF at end of buffer
Y32	NON-SCS, FF Valid
Y33	NON-SCS, Automatic Func. at end of job
Y34	Last LF on page sent as FF
Y35	FF from system sent as FF or LF's
Y36	Suppress IBM control codes
Y37	IBM Printer Emulation Select
Y38	IBM Communication Feature (Query, EAB)
Y39	Suppress Empty Forms
Y44	Suppress CR and SP
Y46	Set IRQ Timer
Y48	Set Permanent ESC Character
Y49	Restrict access of EEPROM settings
Y50	FF After Time Elapse
Y51	User-defined string(s) at Power-on
Y52	User-defined string(s) at Printer Power down/ Printer Error
Y53	User-defined string before Error M essage
Y54	User-defined string after Error Message
Y55	Barcode type select
Y56	Barcode Entry
Y57	User-defined string before local copy
Y58	User-defined string after local copy
Y61	Setup for user-defined strings
Y62	Setup for IBM defined strings
Y63	Define Logo
Y71	Create Translate Table
Y72	Reset Translate Table

Y73	Select Translate Table
Y75	Overwrite Translate Table
Y76	Create APL Translate Table
Y77	Reset APL Translate Table
Y78	Select APL Translate Table
Y80	Overwrite APL Translate Table
Y88	Margin Definition (idaAFP only)
Y89	Enable Margin Definition
Y90	Define User Escape String
Y100	Port Sharing Option
Y120	Settings Printout at Power Up

ESC Features

%%	Special transparent feature (Multiple paired Hex transparent).

e.g.: *%%1B45%*

where % is the defined ESC character.

%	Special transparent feature (Single paired Hex transparent).

where % is the defined ESC character.

Send Logo:

L	Send logo (Logo is defined in Y63).

TEST functions (T-Functions):

T1	Offline Hex Dump (PCIA Dump)
T2	Online Hex Dump
T3	Online ASCII Hex Dump
T4	Print out Settings
T5	Printout Character Set
T6	Cancel Online ASCII Hex Dump

User Settings Functions (X-Functions):

X1   Store Settings in Permanent Storage
X2   Restore Settings from Permanent Storage
X3   Restore Factory Default Settings
X4   Restore Settings from Permanent Storage

Engineering Functions:

Y249   Enable Engineering Mode

Z Functions:

Zn   Send user-defined string

6. FSL Setup via Xerox LS 3270 Parallel Port

FSL support on the parallel input port is defined by temporary escape character, FSL Y100 and ESC X1.

The Engineering Function Y249 (FSL setup via share port) allows you to program the FSL parameters for coax input directly via the parallel input port.

When FSL programming is preceded by FSL Y249, the Xerox LS 3270 will interpret the FSL as sent via the coax line.
Example:

&&??%%Y100,10,'SHARESTRING'%%X1

Sent to the parallel input port, this command string will program FSL Y100 on the parallel input port it was sent to.

&&??%%Y249,PASSWORD%%Y100,10,'SHARESTRING'%%X1

Sent to the parallel input port, this command string will program FSL Y100 on the coax port.

In the description below, it is assumed that you know how to define an escape character (this must be done before you can use the Y249 function).

Character conversion
When the engineering function is received all the following characters in the *Xerox LS 3270* are converted to **LU3** characters.

The characters are now interpreted as received by the coax line.

This functionality is automatically deactivated after timeout on the share port used.

NOTE:
To ensure correct conversion of the characters following the engineering function, use characters existing in the symbol set PC-850 for Coax.

Activating the Y249 Engineering Function

Before the Engineering Function can be activated, an Escape character must be defined (see chapter 5 for details on how to do this).

If you have defined % as Escape CHARACTER, you activate the engineering function by typing:

%Y249,n%

n = password. As this is sensitive information, system operators can contact their i-data distributor for password details.

Deactivating the Y249 Engineering Function

The function will be deactivated automatically after timeout on the share port used (timeout is defined in Y100 Port Sharing Option).

Limitations when Y249 is active

Characters not present in the PC-850 symbot set (Coax) can still be sent in hex notation.

Example:

If you need to define user string 1 containing a PCL reset, then define the following:

&&??%
%Y249,PASSWORD%
%Y61,1,1B45%
%X1

6.1. Updating firmware

The *Xerox LS 3270* firmware (complete firmware) may be updated either via the coax line or via the centronics input port. For further information please contact your distributor.

If errors are detected, the downloading will be terminated and an error message will be printed if possible. If serious errors occur during programming, the firmware has to be downloaded via the share port.

The downloading of firmware is considered complete if no data is received within 30 seconds. The interface will then make a soft reset.

7. Error Messages

Errors fall into two categories: the operator-recoverable errors and the non-recoverable hardware errors.

The error messages listed below are all printed out on paper when the error situation arises (provided the printer is on-line).

You correct the errors from the host system in accordance with the error messages given.

7.1. Recoverable Errors

The error messages are listed in alphabetical order below.

BARCODE IS DISABLED
ESCAPE SEQUENCE ERROR
NOT NUMBER

ESC X IS WRONG

ESCAPE SEQUENCE ERROR

ESCAPE SEQUENCE ERROR
NUMERICAL OVERFLOW

ESCAPE SEQUENCE ERROR
CREATE TRANSLATE TABLE
OUT OF RANGE. MAX 8' 13

ESCAPE SEQUENCE ERROR
NO TRANSLATE TABLE
CREATED

ESCAPE SEQUENCE ERROR
NO TRANSLATE TABLE
APL
CREATED

ESCAPE SEQUENCE ERROR
TRANSLATE TABLE LOAD
CHARACTER IS OUT OF RANGE
VALIDATION VALUE IN FLASH PROM IS WRONG
VALUES ARE NOW OVERWRITTEN WITH FACTORY
DEFAULTS
ESCAPE SEQUENCE ERROR
ILLEGAL SEPARATOR

FUNCTION (NO) IS NOT SUPPORTED
ESCAPE SEQUENCE ERROR
ESC Y

MULTISTRIKE STRING IS TOO LONG

Not in engineering mode

FLASH PROM VERIFICATION ERROR IN CELL

PARAMETER IS OUT OF RANGE

PASSWORD IS NOT ACTIVE

SYNTAX ERROR IN CALL. FUNC = (NO)

THE CONTENTS OF FLASH PROM HAS BEEN DAMAGED
VALUES ARE NOW OVERWRITTEN WITH FACTORY
DEFAULTS

There is no password

THE FLASH PROM IS ALREADY LOCKED, PASSWORD IS
IGNORED

THE PASSWORD TO OPEN NVRAM AREA IS WRONG

THE PASSWORD IS TOO LONG

THE SELECTED BARCODE IS NOT SUPPORTED

The FLASH PROM is locked

The dynamic area is locked

The checksum in the FLASH PROM is wrong

THERE IS NO SPACE LEFT
IN THE DYNAMIC AREA

THE USER ADDRESS STRING IS TOO LONG

TERMINATOR NOT ACCEPTED
ESC Z IS WRONG

Validation value in FLASH PROM is wrong

YOU CANNOT LOCK THE FLASH PROM
BEFORE YOU HAVE PROGRAMMED IT

7.2. Non-Recoverable Hardware Errors

The following recovery attempt can be made:

- Turn power **OFF** for 10 seconds and then **ON** again. If the problem persists, seek technical assistance.

The non-recoverabel error messages consist of this message:

HARDWARE MALFUNCTION. Call for service.

followed by one of these diagnostic messages:

COAX IF ram error

Wrong data in selftest

Wrong word in selftest

Nothing received in selftest

8085 ram error

Rom check sum error

Response missing from COAX IF

Invalid test response from COAX IF

8. Test Printouts

PCL Test Printout

```
Xerox LS 3270 PCL, Version: S10 130.002 /00884004

Boot ID: 80051002
Escape code = 00 Hex, Character = ' '.
There are 2048 bytes available in the dynamic area.
299 bytes are in use, and 1749 bytes are free.

Function 1:     is set to    4
Function 2:     is set to    6
Function 3:     is set to   10
Function 5:     is set to   66
Function 6:     is set to  132
Function 7:     is set to    1
Function 8:     is set to    0
Function 10:    is set to    0
Function 11:    is set to    2
Function 12:    is set to    1
Function 13:    is set to    1
Function 14:    is set to    1
Function 19:    is set to    0
Function 22:    is set to    5
Function 25:    is set to    0
Function 26:    is set to    1
Function 27:    is set to    0
Function 28:    is set to    0
Function 29:    is set to    0
Function 30:    is set to    1
Function 31:    is set to    1
Function 32:    is set to    0
Function 33:    is set to    0
Function 34:    is set to    1
Function 36:    is set to    0
Function 37:    is set to    1
Function 38:    is set to    1
Function 41:    is set to    1
Function 44:    is set to    1
Function 46:    is set to   12
Function 47:    is set to    1
Function 49:    is set to    0
Function 50:    is set to    0
Function 73:    is set to    0
Function 78:    is set to    1
Function 79:    is set to    0
Function 89:    is set to    0
Function 98:    is set to    1
Function 110:   is set to    1
Function 111:   is set to    0
Function 112:   is set to    0
Function 113:   is set to    1
Function 114:   is set to    0
Function 115:   is set to    1
Function 119:   is set to    0
Function 120:   is set to    0

 BUSY TIMEOUT: 240
 TIMEOUT COAX, 20
 TIMEOUT CENTRONICS: 20
 Default GFID:
 10 CPI = 11   , 13 CPI = 204
```

```
12 CPI = 80    , 20 CPI = 281,
15 CPI = 223   , 27 CPI = 290
16 CPI = 253

PROPORTIONAL SPACED = 1412              AFP TOP MARG. = 0 : 0
ACTIVE GFID = 11                        AFP LEFT MARG. = 0 : 0

USER STRING #6 = 1B,26,6C,30,4F
USER STRING #7 = 1B,45

IBM Setup String(s):
130        1B,28,73,33,42
131        1B,28,73,30,42

BARCODES: 39,3,2;29,3,2;28,3,2;26,3,2;35,3,2;24,3,2;33,3,2;22,3,2
```

FSL Test Printout

```
Xerox LS 3270 FSL, Version: S10 130.002/00884004
Boot ID: 80051002
Escape code = 00 Hex, Character = ' '.
There are 2048 bytes available in the dynamic area.
299 bytes are in use, and 1749 bytes are free.

Function 1:     is set to    4
Function 2:     is set to    6
Function 3:     is set to   10
Function 4:     is set to    1
Function 5:     is set to   72
Function 6:     is set to  132
Function 7:     is set to    1
Function 8:     is set to    1
Function 9:     is set to    1
Function 11:    is set to    1
Function 14:    is set to    0
Function 25:    is set to    0
Function 26:    is set to    0
Function 27:    is set to    0
Function 28:    is set to    0
Function 29:    is set to    0
Function 30:    is set to    0
Function 31:    is set to    0
Function 32:    is set to    0
Function 33:    is set to    0
Function 34:    is set to    0
Function 35:    is set to    0
Function 36:    is set to    0
Function 37:    is set to    1
Function 38:    is set to    1
Function 39:    is set to    0
Function 44:    is set to    0
Function 46:    is set to   12
Function 47:    is set to    1
Function 49:    is set to    0
Function 50:    is set to    0
Function 55:    is set to    1
Function 89:    is set to    0
Function 100:   is set to   20
Function 120:   is set to    0

BUSY TIMEOUT: 240
TIMEOUT COAX, Centronics: 20,20

No user strings are sent at power on.
No user strings are sent after printer error.
No user strings are sent at user programming error.
No user strings are sent after user programming error.
No user strings are sent before local copy.
No user strings are sent after local copy.

Password is not activated.
```

APPENDIX A. Quick Reference Guide to FSL Functions

```
 *   = Factory Default
 **  = Factory Default (US)
```

No.	Name	Syntax	Parameters	Deviations
1	Buffer Size	`%Y1,<n1>%`	1 = 960 characters 2 = 1920 characters 3 = 2560 characters *4 = 3440 characters 5 = 3564 characters	FSL: N/S
2	LPI	`%Y2,<n1>%`	0 = USER: No LPI AUTO: Ignored 3 = 3 LPI 4 = 4 LPI *6 = 6 LPI 8 = 8 LPI For an explanation of USER and AUTO modes, see the "3270 Programmer's Guide"	FSL: N/S FSL: N/S FSL: N/S
3	CPI	`%Y3,<n1>%`	0 = USER: No CPI AUTO: Prop. spacing *10 = 10 CPI 12 = 12 CPI 15 = 15 CPI 16 = 16.7 CPI 20 = 20 CPI 27 = 27 CPI	FSL: N/S FSL: N/S FSL: N/S
4	Line Spacing	`%Y4,<n1>%`	*1 = Single Space 2 = Double space	**Y4:** PCL only
5	Form Length	`%Y5,<n1>%`	0 = Disable vertical formatting 001 to 255 = Set FL in no. of lines	*72=FSL *66=PCL **66=FSL **62=PCL
6	Maximum Print Position	`%Y6,<n1>%`	0 = No NLs will be generated by the interface 001 to 255 = Set MPP in no. of characters *132	
7	Case	`%Y7,<n1>%`	0 = Mono case (left to right) *1 = Dual case (left to right) 2 = Right to left (dual case) 3 = Left to right (dual case)	

No.	Name	Syntax	Parameters	Deviations
8	LU1 Language	%Y8,<n1>%	*0 = Download LU1 language from CU 1 = English US EBCDIC 3 = Austrian/ German 4 = Belgian 5 = Brazilian 6 = Canadian (French) 7 = Danish/ Norwegian 8 = Danish/ Norwegian Alt 9 = Finnish/ Swedish 10 = Finnish/ Swedish Alt 11 = French 13 = Austrian/ German Alt 14 = International 15 = Italian 16 = Japanese (English) 19 = Spanish 20 = Spanish Alt 21 = Spanish speaking 22 = English UK 28 = Portuguese 30 = French 105-charact. 31 = Swiss German/ French 40 = Spanish Data/ Text	*0=PCL *1=FSL
9	Print Quality	%Y9,<n1>%	*1 = Draft Print Quality 2 = Near Letter Quality 3 = Correspondence	**Y9:** FSL only

No.	Name	Syntax	Parameters	Deviations

10	Page Format	%Y10,<n1>[,n2]%	**n1**
			*0 = Portrait
			 1 = Landscape
			 2 = COR 1
			 3 = Fit to page in
			     portrait
			 4 = 8" x 11"
			     Portrait
			 5 = 8" x 12"
			     Portrait
			 6 = 13.2" x 8.5"
			     Landscape
			 7 = Landscape
			     13.2"
			 8 = Portrait
			     10 cpi x 11"
			 9 = Portrait
			     10 cpi z 12"
			
			n2
			1 = Tractor (Upper)
			2 = Drawer 1 (Upper)
			3 = Drawer 2 (Lower)
			4 = Manual feeder
			5 = Envelope feeder
			6 = Drawer 3 (Lower)
				Y10:
				PCL only

11	Paper Path	%Y11,<n1>[,n2]%	**n1**
			0 = Ignore PPM and
			    select tray
			    from printer
			    front panel
			1 = Tractor (Upper)
			2 = Drawer 1
			3 = Drawer 2
			4 = Manual feeder
			5 = Envelope feeder
			6 = Drawer 3
			7 = Drawer 4
			n2
			0 = No destination
			    drawer selected
			    Destination
			    drawer will be
			    defined by
			    printer's
			    settings.
			1 = Destination 1
			2 = Destination 2
			3 = Destination 3
			4 = Destination 4
			5 = Destination 5
			6 = Destination 6
			7-255 Reserved for
			future use.
				FSL: N/S
				
				*1=FSL
				*2=PCL
				
				FSL: N/S
				FSL: N/S
				FSL: N/S
				FSL: N/S

No.	Name	Syntax	Parameters	Deviations
12	Paper Size	%Y12,<n1>[,n2]%	**n1** *1 = A4 2 = Legal **3 = Letter 4 = Executive 5 = Letter (Monarch) 6 = Business (Com 10) 7 = International DL 8 = International C5 10 = A3 **n2** 1 = Tractor (Upper) 2 = Drawer 1 (Upper) 3 = Drawer 2 (Lower) 4 = Manual feeder 5 = Envelope feeder 6 = Drawer 3 (Lower)	**Y12:** PCL only

No.	Name	Syntax	Parameters	Deviations
13	Line Overflow Option	%Y13,<n1>[,n2]%	**n1** 0 = Lines longer than print line are **wrapped**. Overflow data on next line. *1 = Lines longer than print line are **cut**. Overflow data is not printed. **n2** 1 = Tractor (Upper) 2 = Drawer 1 (Upper) 3 = Drawer 2 (Lower) 4 = Manual feeder 5 = Envelope feeder 6 = Drawer 3 (Lower)	**Y13:** PCL only
14	Enable Graphics	%Y14,<n1>%	0 =Disable graphics 1 =Enable graphics 2 =Disable graphics (and no error detection at mode changes) 3 =Enable graphics (and no error detection at mode changes)	*0=FSL *1=PCL FSL: N/S FSL: N/S
19	Duplex Printing	%Y19,<n1>%	*0 = Simplex 1 = Long-edge duplex 2 = Short-edge duplex	**Y19:** PCL only
22	Printer Driver Selection	%Y22,<n1>%	*5 = PCL 5 driver. Disable ida AFP query. 15 = PCL 5E driver Enable ida AFP query.	**Y22:** PCL only
25	FF before Local Copy	%Y25,<n1>%	*0 = No FF 1 = FF	

No.	Name	Syntax	Parameters	Deviations
26	FF after Local Copy	%Y26,<n1>%	0 = No FF 1 = FF	*0=FSL *1=PCL
27	Non-SCS Print Image	%Y27,<n1>%	*0 = Null line suppression in Local Copy and non-SCS print. 1 = Null line suppression in non-SCS print and true screen image in Local Copy 2 = True screen image in non-SCS print and null line suppression in Local Copy 3 = True screen image in non-SCS print and Local Copy 4 = Null line suppression and formatted print in LU3 print and in Local Copy 5 = Null line suppression and formatted print in LU3 print. Null line suppression and unformatted print in Local Copy. 6 = Null line suppression and unformatted print in LU3 print. Null line suppression and formatted print in local copy. 7 = Null line suppression and unformatted print in LU3 print and in local copy.	
28	CR at MPP +1	%Y28,<n1>%	*0 = 1st PP of next line 1 = 1st PP of current line	

No.	Name	Syntax	Parameters	Deviations
29	NL at MPP +1	%Y29,<n1>%	*0 = 1st PP of current line + 2 lines 1 = 1st PP of next line	
30	Valid FF Followed by Data	%Y30,<n1>%	0 = 2nd of 1st line of next form 1 = 1st PP of 1st line of next form	*0=FSL *1=PCL
31	Valid FF at End of Print Buffer	%Y31,<n1>%	0 = 1st PP of 2nd line of next form 1 = 1st PP of 1st line of next form	*0=FSL *1=PCL
32	FF Valid	%Y32,<n1>%	*0 = FF valid only at 1st PP in line or MPP+1 1 = FF valid anywhere	
33	Automatic Function at End of Job	%Y33,<n1>%	*0 = NL at 1st PP of next line 1 = 1st PP at 1st line of next form	
34	Last LF on Page Sent as FF	%Y34,<n1>%	0 = No *1 = Yes, count lines in FSL 5 and send FF	*0: FSL *1: PCL
35	FF Usage	%Y35,<n1>%	*0 = Pass FF from Host 1 = Count the lines in function 5	**Y35:** FSL only
36	Suppress IBM Control Codes	%Y36,<n1>%	*0 = Respect all IBM codes 1 = Suppress all IBM codes	

No.	Name	Syntax	Parameters	Deviations
37	IBM Printer Emulation Select	%Y37,<n1>%	0 = 3287 Emulation *1 = 3286/4214 Emulation 2 = HEX 00-3F sent transparently except valid SCS codes. TRN sent non-transparently 4 = HEX 00-3F sent as blanks except valid SCS codes. TRN sent trans-parently 6 = HEX 00-3F sent transparently except valid SCS codes. TRN sent transpar-ently 8 = Unprintable characters are suppressed ex-cept certain SCS codes (see the Programmer's Guide for further details)	
38	IBM Communi-cation Feature	%Y38,<n1>%	0 = No query reply, but EAB *1 = Query reply and EAB 2 = No query reply and no EAB	
39	Suppress Empty Forms	%Y39,<n1>%	*0 = No forms suppressed 1 = Empty forms suppressed	**Y39:** FSL only
41	Generation of New Line at End of Message	%Y41,<n1>%	*0 = Disable 1 = Enable	**Y41:** PCL only
44	Suppress CR and Spaces to Obtain Same Position	%Y44,<n1>%	0 = No suppression 1 = Suppression	*0 = FSL *1 = PCL

No.	Name	Syntax	Parameters	Deviations
46	IRQ Time	%Y46,<n1>[,n2,n3]%	**n1** 000 = Never send IRQ 001 to 255 = Send IRQ after n1 x 5 seconds *12 Send IRQ after 1 minute **n2** 001 to 255 = Hold Time Out. Send Hold Time Out after n2 x 5 sec if printer is in stop mode. *120 **n3** 000 = Never send Busy Timeout IRQ 001 to 255 = Send Busy Timeout after n3 x 5 seconds if printer is in stop mode. *240	
47	ESC Mode Selection	%Y47,<n1>%	*1 = ESC xx sent as "xx" HEX 2 = Tel-A-Graf support 3 = Double escape feature	**Y47:** PCL only

No.	Name	Syntax	Parameters	Deviations
48	Permanent ESC Character Selection	%Y48,<n1>[;n2 [;n3]]% or %Y48,<xx>%	**n1** 'char.' = character selected from the current IBM char. table in apostrophe notation xx = HEX value of the character selected from the LU3 table **n2** max. of 5 characters to introduce transparency (string must not begin w. '&' or char. defined in n1) lead-in sequence **n3** 5 chars. max. to end transparency in-valid values: (0-9 and A-F) lead-out sequence *00	

49	Restrict Access of EEPROM/RAM	%Y49,<n1>[,n2]%	**n1** *0 = Unlock FSL
			  1 = Lock RAM and EEPROM
			  2 = Lock EEPROM only
			
			n2 password optional	

50	FF after Time Elapse	%Y50,<n1>%	*0 = No extra FF is sent 1 to 255 = Send FF after (n1) seconds	

No.	Name	Syntax	Parameters	Deviations
51	User-Defined String(s) at Power-Up	%Y51,<n1>%	0-7 = One or more strings defined in FSL 61 first	
52	User defined string(s) at power up/printer error	%Y52,<string no>%	0-7 = One or more strings indicated in the form <n1>,<n2>...<nx> in ascending sequence	**Y52:** FSL only
53	User Defined string(s) before programming error message	%Y53,<n1>[n2],..]	0-7 = One or more strings indicated in the syntax	**Y53:** FSL only
54	User defined strings after pro-gramming er-ror message	%Y54,<n1>,[,n2] [,...]	0-7 = One or more strings indicated in the form (n1),(n2)...,(nx)	**Y54:** FSL only

No.	Name	Syntax	Parameters	Deviations
55	Bar Code Select	%Y55,<n1>%	0 = Disable bar code printing *1 = Enable bar code printing on graphics printers	**Y55:** FSL only
56	Bar Code Entry		Please see the chapter on Bar Code Printing in the 3270 Programmer's Guide, doc. no. D62077	**Y56:** FSL only
57	User-Defined String(s) before Local Copy	%Y57,<n1>% [,n2][,...]%	0-7 = One or more strings defined in FSL 61	
58	User-Defined String(s) after Local Copy	%Y58,<n1> [,n2][,...]%	0-7 = One or more strings defined in FSL 61	
59	Bar Code Type Definition	%Y59,<n1>,<n2>, <n3>,<n4>%	**n1** 1-8 = Bar code def. no. **n2** 22-39 = Bar code type **n3** 1-255 = Height in inches **n4** 1-32 = Horizontal expansion *1	**Y59:** PCL only
60	Font Link	%Y60,<n1>,<n2>%	**n1** 0,10,12,13,15,16,20, 27, CPI = pitch **n2** 1-65535 = GFID No.	**Y60:** PCL only
61	Setup for User Defined Strings	%Y61,<n1>,<n2>%	**n1** 0-7 = User String no. **n2** 00-FF = String contents in HEX or in apostrophe notation	

No.	Name	Syntax	Parameters	Deviations
62	Setup for IBM Defined Strings	%Y62,<n1>,<n2>%	Please refer to the 3270 Programmer's Guide, doc. no. D62077 for further information	
63	Logo Definitions	%Y63,n,<string> [;n<string>; <string>;n, <string>;....;n, <string>%	n = user defined logo number (0-7) string = user string in hex and/or characters with apostrophe notation	
71	Select Tranlate Table	%Y71,<n1>%	1-8 = Number of the translate table to be selected	**Y71:** FSL only
72	Reset Translate Table	%Y72,<n1>%	1-8 = Delete the indicated table	
73	Select Translate Table	%Y73,<n1>%	1-8 = Select the indicated table	
74	Define Printer Symbol Set Strings	%Y74,<n1>,<n2>%	*n1* 1-8 = Symbol set no. *n2* 00-FF = String contents in HEX	**Y74:** PCL only

No.	Name	Syntax	Parameters	Deviations
75	Overwrite Translate Table	**PCL:** %Y75,<n1>[,n2], <data>[:n1,n2, <data>]%	**n1** 00-BF = LU3 position in HEX of character to be trans- lated **n2** 1-8 = Symbol set defined in FSL 74 **n3** 00-FF = Data in ASCII HEX required to print the character	**PCL mode**
		FSL: %Y75,n1,n2[;n2]| [:n1,n2]%	**n1** LU3 char. 00-BF = Specifies which LU3 characters to be translated to parameter n2 **n2(data)** 00-FF = ASCII code as the LU3 value shall be translated to. Can be defined as paired HEX up to 12 bytes, separated with commas.	**FSL mode**
76	Create APL Translate Table	%Y76,<n1>%	1-8 = Create an APL Translate Table	**Y76:** FSL only
77	Reset APL Translate Table	%Y77,<n1>%	1-8 = Reset the indicated APL table	
78	Select APL Translate Table	%Y78,<n1>%	1-8 = Select the indicated APL table	

No.	Name	Syntax	Parameters	Deviations
79	ida 820 AFP Font Offset	%Y79,<n1>%	0-200 = Offset to be added to the specified font *0 = No offset is added This function only needs to be changed from default if other applications are using the ida AFP font IDs.	**Y79:** PCL only
80	Overwrite APL Translate Table	%Y80,<n1>[,n2],<n3>%	**n1** 30-BF = The position in HEX of the APL character to be trans-lated **n2** 1-8 = Symbol set defined in FSL 74 **n3** 00-FF = Data in ASCII HEX required to print the character	

No.	Name	Syntax	Parameters	Deviations
88	Physical Margins	%Y88,<n1>,<n2> [,n3]%	**n1** 0 to 32000 = Horizontal margin compensation in 1/1440" *0 **n2** 0 to 32000 = Vertical margin compensation in 1/1440" *0 **n3** 0-9 = Page format as defined in FSL 10 20 = Support for front page in duplex 21 = Support for back page in duplex	
89	Physical Margin Compensation	%Y89,<n1>[,n2]%	**n1** *0 = No compensation 1 = Compensation as defined in FSL 88 **n2** 1 = Drawer 1 (Upper) 2 = Drawer 1 (Upper) 3 = Drawer 2 (Lower) 4 = Manual feeder 5 = Envelope feeder 6 = Drawer 3 (Lower)	
90	Define User ESC String Definition	%Y90,<n1>,<n2>%	**n1** 0 = Erase strings 00-FF = String no. in HEX **n2** '<string>' = String contents in apostrophe nota-tion	

No.	Name	Syntax	Parameters	Deviations
91	Font Definition	%Y91,<n1>,<n2>,<n3>,<n4>,<n5>[,n6]%	**n1** *(IBM GFID)* 1-65535 = IBM GFID no. **n2** *(Typeface)* 0-255 = Pre-program-med typeface value **n3** *(Attribute)* 0 = No attributes 1 = Bold 2 = Italic 3 = Bold and Italic 4 = Proportional 5 = Prop. Bold 6 = Prop. Italic 7 = Prop. Bold and Italic **n4** *(Symbol Set)* *0-7* **n5** *(Point Size)* 1-65535 = Point size **n6** *(Translate Table)* 1-8 Optional	**Y91:** PCL only
92	Font Point Size Definition String	%Y92,<n1>,<n2>%	**n1** 10-255 = String no. in decimal **n2** 00-FF = String contents in HEX	**Y92:** PCL only
93	Font Attribute Definition String	%Y93,<n1>,<n2>%	**n1** 10-255 = String no. in decimal **n2** 00-FF = String contents in HEX	**Y93:** PCL only
94	Font Typeface Definition String	%Y93,<n1>,<n2>%	**n1** 10-255 = String no. in decimal **n2** 00-FF = String contents in HEX	**Y94:** PCL only

No	Name	Syntax	Parameters	Deviations
96	Simulate Font Change	%Y96,<n1>	1-65535 = GFID No. in deci- mals *11	**Y96:** PCL only
98	Automatic Page Orientation APO)	%Y98,<n1>[,n2]%	**n1** 0 = Activate APO *1 = Deactivate APO 2 = Validate physical page **n2** 1 = Drawer 1 (Upper) 2 = Drawer 1 (Upper) 3 = Drawer 2 (Lower) 4 = Manual feeder 5 = Envelope feeder 6 = Drawer 3 (Lower)	**Y98:** PCL only
100	Port Sharing Option	%Y100,<n1>[,n2]%	**n1** 0-255 = Timeout in no. of seconds *20 **n2** 00-FF = String in HEX to be sent to printer before transmission of data when printer is selected by sharing unit	
110	idaAFP Orientation Support Function tells idaAFP to send orienta- tion via query	%Y110,<n1>%	**n1** 0 = PCL5 Orientation Command suppressed *1= PCL5 Orientation Command supported	**Y110:** PCL only

No.	Name	Syntax	Parameters	Deviations
111	idaAFP Duplex Support This function tells idaAFP to use the duplex facility in the printer. idaAFP is told to support duplex via query.	%Y111,<n1>%	**n1** *0 = Printer does not support duplex 1 = Printer supports duplex	**Y111:** PCL only
112	idaAFP PCL5 Font Support Via query, tells idaAFP to send PCL5 font commands.	%Y112,<n1>%	**n1** *0 = PCL5 Font not supported 1 = PCL5 Font is supported	**Y112:** PCL only
113	idaAFP Early Print Complete This function enables the spool system to make a better re-covery after errors.	%Y113,<n1>%	**n1** 0 = All is printed before response to host. *1 = Early print-complete supported	**Y113:** PCL only

No.	Name	Syntax	Parameters	Deviations
114	idaAFP Colour Support	%Y114,<n1>%	**n1** *0 = No colour support available 1 = Support for colour printing 2 = Colour by simulation 9 = As 1, but with Pixel Placement Support 10 = As 2, but with Pixel Placement Support	**Y114:** PCL only
115	idaAFP Misc.	%Y115,<n1>%	**n1** 0 = No features covered by this FSL available *1 = Support for Unit selection in printer	**Y115:** PCL only
119	Auto-Configuration select	%Y119,<n1>%	**n1** *0 = Disable Auto-configuration 2 = Auto-configuration via PJL	**Y119:** PCL only
120	Settings Print-Out at Power On	%Y120,<n1>%	**n1** *0 = Disable settings print-out at power on 1 = Enable settings printout at power on	
249	Enter Engineering Mode	%Y249,<n1>%	**n1** password (contact your local distributor)	

No.	Name	Syntax	Parameters	Deviations
L	Send Logos	#Ln	0-7 = User Defined Logos	
T	Initiate Tests	%T#	1= Off-line hex dump 2= On-line hex dump 3= ASCII hex dump 4= Printout settings 5= Printout translate table 6= Cancel ASCII hex dump **Re. T2:** Please note that when using LU3 communication, it is not possible to make an online hex dump (with function T2) of data streams containing 3270 structured fields, e.g. GDDM print or ida AFP.	
X	Save/ Overwrite Settings	%X#	1= Store RAM in EEPROM 2= Restore default 3= Factory default to RAM 4= Restore settings to power up defaults	
Z	Send User String	%Z#	0-7 = User strings defined in FSL 61	
W	Send Bar Code	%W,n1,data%	**n1** Numeric value from 1-8 indicating the defined bar code number **data** Data must not exceed one line	**W:** PCL only

APPENDIX B. Selected Xerox Products

Coax	Supported Printers
External	
Xerox LS 3270	Any Xerox decentralized PCL printer
Xerox 3270 C/RS	Any Xerox decentralized PCL printer
Xerox 3270/X C/RS	Any Xerox decentralized XES & PCL printer
Xerox Flex + Xerox 3270 PCL/XES	Any Xerox decentralized XES & PCL printer
External IPDS	
Xerox 3270 IPC C/RS	Any Xerox decentralized PCL printer
Xerox 3270/X IPC C/RS	Any Xerox decentralized PCL printer
Internal	
Xerox 4500/3270	Xerox 4505, 4510, 4517, 4520
Xerox 4030/3270 XES/PCL	Xerox 4030, 4197
Xerox 4213/3270 XES/PCL	Xerox 4213
Internal IPDS	
Xerox 4500/3270 IPC	Xerox 4505, 4510, 4517, 4520
Xerox 4030/3270 IPC	Xerox 4030, 4197
Xerox 4213/3270 IPC	Xerox 4213
Twinax	**Supported Printers**
External	
Xerox LS 5250	Any Xerox decentralized XES & PCL printer
Xerox 5250 C/RS	Any Xerox decentralized XES & PCL printer
Xerox Flex + Xerox 3x-400 PCL/XES	Any Xerox decentralized XES & PCL printer
External IPDS	
Xerox 5250 IPC C/RS	Any Xerox decentralized PCL printer
Internal	
Xerox 4500/3x-400	Xerox 4505, 4510, 4517, 4520
Xerox 4030/3x-400 XES/PCL	Xerox 4030 and 4197
Xerox 4213/3x-400 XES/PCL	Xerox 4213
Internal IPDS	
Xerox 4500/3x-400 IPC	Xerox 4505, 4510, 4517, 4520
Xerox 4030/3x-400 IPC	Xerox 4030 and 4197
Xerox 4213/3x-400 IPC	Xerox 4213
Token Ring	**Supported Printers**
External	
Xerox PrintServer TR	Any Xerox decentralized printer
External SCS	
Xerox PrintServer TR 3270	Any Xerox decentralized PCL printer
External SCS/DCA	
Xerox PrintServer TR 5250	Any Xerox decentralized PCL printer
External IPDS	
Xerox PrintServer IPC TR	Any Xerox decentralized PCL printer
Internal	
Xerox 4500 PS TR	Xerox 4505, 4510, 4517, 4520
Internal IPDS	
Xerox 4500 PS TR IPC	Xerox 4505, 4510, 4517, 4520
Ethernet	**Supported Printers**
External	
Xerox PrintServer ETH	Any Xerox decentralized printer
External SCS	
Xerox PrintServer ETH 3270	Any Xerox decentralized PCL printer
External SCS/DCA	
Xerox PrintServer ETH 5250	Any Xerox decentralized PCL printer
External IPDS	
Xerox PrintServer IPC ETH	Any Xerox decentralized PCL printer
Internal	
Xerox 4500 PS ETH	Xerox 4505, 4510, 4517, 4520
Internal IPDS	
Xerox 4500 PS ETH IPC	Xerox 4505, 4510, 4517, 4520

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